Ladder of Inference/Mental Model

Adapted from Senge, P., et al. (2000). *Schools that learn: A fifth discipline fieldbook for educators, parents, and everyone who cares about education* (pp. 5-27, 66-83). New York: Doubleday/Currency.

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Purpose

The NYC Leadership Academy (Leadership Academy) uses the concepts of the ladder of inference and mental model to help participants become aware and conscious of their own and other's thinking and making meaning with the purpose of deepening their understanding of the driving forces behind one's actions and decision-making. The Leadership Academy provides opportunities for participants to learn about and examine their own belief systems and test them through honing inquiry (questioning) and reflection skills. The goals are to surface individual assumptions about the world in the safe environment of the program, to understand how assumptions influence the way we see reality and make decisions, and to create "cognitive dissonance" in participants as they start challenging their own assumptions.

The work with mental models and the ladder of inference is supported by having participants read and provide a critical review of selected readings from *Schools that Learn* by Peter Senge.

Suggested Time
30-45 minutes

Description/Activity Steps
<u>In the mini lesson, the facilitator should make the following points about mental models:</u>
Mental models are the images, assumptions, and stories that we carry in our minds of ourselves, other people, institutions, and every aspect of the world. They may loosely be referred to as our prejudgments. They serve as a filter that determines what we actually see and shape how we act. We quickly add meaning to what we see and draw conclusions. When observing the same event, two people will describe it differently because they take in different information and detail – it is because they have different mental models.

Our mental models exist below our level of awareness and tend to go unexamined and untested. When making sense of current realities, our immediate instinct is to remember what confirms our beliefs – our mental models. What are the consequences of unexamined mental models? Unexamined mental models have the potential to limit what we see, and as a result, limit our options for action.

What can be done to increase the options of what we see? We cannot change our mental models but can improve how we understand our sense-making, our belief system, our assumptions and biases, by going against leaping to what we hold true in our minds. In other words, we hold many unexamined assumptions that lead us to make bad decisions. It is about the discipline of looking for disconfirming evidence of our own belief and conclusion about the observed data; disproving our truths; creating cognitive dissonance when going against own mental model.

<u>The facilitator should use the ladder of inference graphic (attached) to illustrate how mental models work in our minds:</u>
Using the ladder of inference graphic organizer can help us understand the work of mental models – how we make sense of the world and the world of self-generating beliefs – by following the rungs of the ladder. *(The facilitator uses an example and climbs the ladder of inference by starting either way – the lowest or the highest rung)*

- *(up the ladder):* The graphic organizer of the ladder of inference demonstrates my way of seeing the world and how the data I select influence what I actually see, how quickly we make sense of what we see, how our own unexamined assumptions become confirmed, how biases get perpetuated in this way, and how this influences our actions.
- *(down the ladder):* We make decisions based on our beliefs, which we adopt from our conclusions. The conclusions are inferred from our observations and our past experiences. For example, what values am I communicating through my behaviors and/or language?

The facilitator's role is to support participants' understanding of how to question their own mental models by introducing tools that can be used to help us look for disconfirming evidence of beliefs (our own and of others):
- Becoming more aware of our own thinking and reasoning (reflection)
- Making our thinking and reasoning more visible to others (advocacy)
- Getting more insight into thinking and reasoning of others (inquiry, authentic questioning)
- Using low inference data (what you see, hear)

The goal, therefore, is to teach participants to question their own sense-making by going down the ladder of inference to the observable data rung. In the same way, we can work from within someone else's mental model. We can never know the complexity of the situation from behind the other person's eyes – their mental model. What we can do is to ask questions to understand how the other person makes sense of the world and operates. Our purpose is not to change their mental model but rather find the leverage point in their mental model.

Debrief Tips
At the end, get in touch with participants about where they are. Acknowledge that this work is incredibly difficult and disorienting, emotionally taxing and painful, and (at least to the majority of them) very new.

Advise participants that we will continue to hone their skills often in this discipline, return to the concepts frequently in the program, and apply them to the school-based context through activities and role plays that are a great vehicle for demonstrating our mental models and the ladder of inference at work.

THE LADDER OF INFERENCE/MENTAL MODEL

Take
Actions
based on beliefs

Adopt
Beliefs
about the world

Draw
Conclusions

Make
Assumptions
based on the added meanings

Add
Meanings
(cultural and personal)

Select
Data
from observations

The **reflexive loop**
(Our beliefs affect what data
we select next time)

Observable
data and experiences
(as a videotape recorder might
capture it)